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Interview with Dr. Anthony Fauci July 17, 2001

National Institutes of Health, Bethesda, MD Interviewer: Sandeep Khot

Khot: In a previous interview with Dr. Harden, you related a story about how a recruiter for the Armed Services addressed your senior class of medical school and informed each of the male students of their responsibility for service in the Armed Services or the Public Health Service under the "doctor draft". Was this the first time you had heard about the Clinical Associate Training Program at the NIH and, if not, when did you learn about it and from whom?

Fauci: I had heard about it vaguely in medical school. The meeting that you refer to in that historical account was in the beginning of my 4th year in medical school. We had heard that people had gone down to the NIH so we knew as third and fourth year medical students. We had some interns and residents who were on the house staff who actually came back as chief residents who had been at the NIH. So we vaguely knew that there was a Public Health Service (PHS) program that included the NIH. We also knew there was one that included the CDC, the ERS officers. But not to the detail that someone would want to do it or have an inherent burning desire to do it. It was only when it became very clear to us and which we all knew that we were drafted, that there was no way we were not going to be in the service, that that was 100%. We were informed of the choices. You could apply to the PHS, which would either put you in the CDC or the NIH among other things – there was the Indian Health Services, etc., but it was fundamentally CDC vs. NIH. Then there was the Navy, Army, and the Air Force. So I put the NIH 1st, the Navy 2nd, the Army 3rd, and the Air Force 4th.

Khot: What was the perception of other medical school professors or classmates toward the program?

Fauci: It was clear at that time that the NIH was in its glory days. It was considered among the faculty that if you could even conceivably get down to the NIH that would be terrific for you both career wise, etc. So it was looked upon by the faculty, the students, and the house staff as a highly desirable thing because at that time, less so now, the road to academic success was a road that included the NIH. You go to a good medical school, you get a really good internship, you spend a few years at the NIH and then you either come back to your medical school or you go some other place. It was part of the tradition among the elite of academic medicine. In fact, it was true because if you look at all the people who were the leaders in the country, a substantial portion of them spent some time in some manner or other at the NIH.

Khot: How difficult was it to obtain a position in the ATP?

Fauci: It's difficult to assess how difficult it was because I succeeded so I guess it was easy. I went down, I put in my application. The way it was is that you would send an application and your application would be circulated around to the different institutes. Then you would hear from the different institutes, through the central office, that you had been asked to interview by Allergy and Infectious Diseases, Diabetes and Digestive Diseases, Arthritis and Musculoskeletal Disease, etc. So the institutes that looked at your applications would say "I might be interested in that guy", they would all send…it was almost like a matching program. In fact, it was a matching program, where you would send in a list and they would say yes, we favorably looked upon your application and when you come down to Bethesda, you're going to be interviewed by one, two, three, four, five. And then after you were interviewed, you would then put your 1st, 2nd, 3rd and 4th choice down and then it would truly be a matching program, very similar to the internship and residency matching programs. I interviewed with 2 or 3 [institutes]. It's tough to remember because it was over 30 years ago. I interviewed with Shelly Wolff at the NIAID, with a guy named John Decker at the Arthritis Institute and someone else at the Diabetes and Digestive Diseases Institute. And it was very clear in my mind after those interviews that I wanted to be with the NIAID and so I put the NIAID as my first, and essentially only, choice and I got picked by Shelly Wolff.

Khot: You have mentioned that Dr. Marvin Schlesinger, who you studied under at Cornell, knew Dr. Wolff at the NIH. Considering the high level of competition, how important was it to have a connection?

Fauci: No it wasn't a connection of favoritism; he simply made me aware that there was a program down there that you should go look at. What Marv did was that he encouraged me greatly to (A) go down to the NIH and (B) put Shelly [Wolff] as my first choice, which is what I did.

Khot: Can you describe the research-training environment at the NIH when you arrived as a CA in 1968? Who were the leading figures in your field?

Fauci: When I came down, the thing that was striking about the program, which now is a bit different, is that it was clear that **everyone**, every one of the clinical associates, not only at the NIAID, but the Heart Institute, the Cancer Institute, the Diabetes, Arthritis, they were the elite of the people coming out of their internships and residencies. It is less so now because its more diffuse but back then the elite internship and residencies were Cornell, Columbia, Mass General, the Brigham, UCSF (to a lesser degree because it wasn't as popular as it is now), Yale, Wash U, University of Washington, Seattle. If you looked at the people who were clinical associates, at that time, they were all the top of their classes, the number one intern or resident in their program, they were clearly the elite. So the critical mass of high quality people was one of the reasons why it was so exciting to be down here. You were sort of on the all-star team when you came down here. It was really a very interesting and exciting atmosphere. It wasn't mediocre. It was the best of the best that were coming out of their internships and residencies that would come down here. So most of the people, like myself, graduates from medical school, you would get a commitment to come down here two or three years in advance because you sort of knew right in the beginning of your internship whether you were going to come down. Then you would spend an internship and either one or two years of residency and then you would come down to the NIH. So all of these people would be coming from the top residencies and they were graduates from the top medical schools. And the leading people in the field were people such as, Shelly Wolff, David Rogers, Bob Petersdorf, Paul Beeson, Ivan Bennett, Ed Hook; all were senior big time people in infectious diseases at the time.

Khot: I wanted to discuss some the work you performed in the late 60's and early 70's with Wegener's and Polyarteritis nodosa. You stated in an earlier interview with Dr. Harden how you and some of the other Fellows such as Dr. Alexander Lawton and Dr. Herbert Reynolds "taught each other immunology". Can you describe the collaboration that occurred within the ATP? Was it unique to the NIH and do you believe that it had to do with the caliber of the associates?

Fauci: It would be presumptuous to say it was unique to the NIH but, for example, in the spirit of what I said of the top people, I went into a laboratory to learn immunology. The head of the laboratory at that time was a fellow named John Johnson. In my laboratory was Sandy Lawton, Herb Reynolds and a few other people. I wanted to learn human immunology and they were fundamentally involved in rabbit and guinea pig immunology so I went into the laboratory to learn the fundamental principles. But Herb, particularly, and I…we taught ourselves human immunology and we went on to become human immunologists. But the opportunity to learn was an electrical atmosphere; it was very conducive to learning. People were constantly helping each other. It was crowded conditions. We were sitting all over each other in the laboratories so you couldn't help but be with someone all the time.

Khot: You have remarked on the flexibility of some of the Principal Investigators that you went to work with, like Dr. Wolff and Dr. John Johnson, in allowing you to learn cellular immunology in the way you wanted to. Can you elaborate on this? Was this flexibility something that was pervasive throughout the program?

Fauci: Shelly was doing more human clinical stuff; he was less of a basic scientist. He was more of a clinical investigator. He was the prototype of the superb clinical investigator. John Johnson, even though now he's a great clinician, back then he was studying dog and rabbit immunoglobulins. I had no use for dog and rabbit immunoglobulins. I wanted to learn human immunology because I felt myself to be fundamentally a physician and I wanted to study human immune mediated diseases. So, even though they were studying dog immunoglobulins in the lab, I told John I don't want to study dog immunoglobulins, I want to study antigenic competition and suppression and regulation of the human immune system, is that o.k. with you? He was lab chief and he could have said no, I want you to study dog immunoglobulins because I need a pair of hands to study it. He didn't say that. He said what ever you want to do is fine. The NIH is a phenomenal place, go around and see if you can learn some human immunology or the fundamentals of cellular immunology from the people that are around. And the people that were around then were phenomenal. There was Baruj Benacerraf; there was Bill Terry, John Fahey, Henry Metzger, and Lee Hood. There were an incredible number of great immunologists around so it was like a kid in a candy store. I learned this from this person and that from that person and that's how I taught myself human immunology. Because he wasn't a human immunologist, he was a canine 'immunoglobulinologist'. [That flexibility] was pervasive throughout the program and it was really engendered by Shelly Wolff…he was a spectacular clinician. He was able to surround himself with the brightest young people and he would pick people and say, "You haven't done anything yet but I can tell from just looking at you that you are going to be good." And he would give you resources, independent resources, to pursue what you needed to pursue. He had a spectacular capability of picking bright young people, pointing them in the right direction and getting out of their way. That's something that is a very important trait in a mentor. He would figure out that you had what it takes, and once he figured that out, he would encourage you to do whatever you want, he would support you and, above all, he would stay out of your way. He wouldn't be an impediment. The success of the program back in the late 60' s and early 70's…absolutely the credit belongs to Shelly Wolff.

Khot: Do you recall if there was ever a specific research agenda for the ATP scientists? Who decided what research you would do?

Fauci: Well, you did in the context of the lab you were in. Some people would come in and say I want to work on this and, in general, the lab chief would say fine if you had a good reason, you had thought it out, it was a doable experiment, and it was an important question. Some people would come in and say I just want to learn research; I don't really have any good idea of what I want to do. Then you were incorporated into the project that was going on in the laboratory. When I first began learning I did not know what I wanted to do so I was incorporated into a project, a project that Sandy Lawton was doing and he sort of spilled it over to me. And then as I started to learn more about immunology, then I started to think about my own projects. It was then that I went to John Johnson and Shelly Wolff and said I want to learn some other techniques because I want to answer some other questions. It was their flexibility that said fine, go ahead and do it.

Khot: In your opinion, was there any link at all between ATP research and the war effort?

Fauci: I don't think the research program had any link to the war effort. The only impact that we had and interaction remotely related to the war was we were the infectious disease department…back in the 60's the National Naval Medical Center did not have an infectious disease department so Shelly Wolff volunteered to provide infectious disease consultation for the Navy. The interaction that I had is that we used to see all the guys who were shipped over, wounded, burned, blown apart, that would come to the Naval Medical Center with infections and we would take care of them. So I had an interesting opportunity even though I wasn't in the armed forces, I was a Public Health Service officer, I took care of a lot of wounded Vietnam war veterans when they were over there in the Navy.

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Khot: What about the ATP most appealed to you?

Fauci: The opportunity you had to mingle with, learn from, study with and interact with the best and the brightest. It was like going to an elite school in which you were surrounded by

the best. And that's great because if you were very good yourself that brings out the best in you.

Khot: How did your experience in the ATP modify your career decisions?

Fauci: It's been one of the major landmarks in my career and a major basis upon which I made my decisions. I was successful for my three years. It was a close call because the first year you're not that successful because you're just learning. At the end of my second year, they asked me to be chief resident at New York Hospital, Cornell Medical Center. The question was should I go back to Cornell, which I had originally wanted to do and then stay there on the faculty. But I was so successful and Shelly wanted me so badly to come back that when I told him that I was going to be chief resident, he said I will put aside a lab for you and as soon as you finish your chief residency, I will make you a senior permanent person at the NIH. So the environment here and the fact that I liked it so much was critical in my career decision. I never would have been a permanent person at the NIH and I never would have been lab chief and I wouldn't have been the Director of the Institute if I didn't do that. So it was that three-year experience that was so attractive to me that enticed me to come back and once I came back everything opened up for me.

Khot: Dr. Edward Rall has commented that the ATP has had a major influence on medical education because the addition of a serious research component to the training of M.D.'s who were going to end up in universities was pioneered here. Would you elaborate on that?

Fauci: I absolutely agree with that. If you wanted to get an experience in clinical medicine where you could apply bedside observation to laboratory bench work, the ATP was not the only program that you could come to but it was built for that. In other medical centers you could do it but you had to maneuver to do it. This was built for the sole purpose of "bench to bedside" and "bedside to bench". A hospital is built for the sole purpose of taking care of sick people. The teaching aspect of it, the research vs. clinical, you had to formulate it into the existing structure. In contrast, this was built solely for that purpose. The CA (Clinical Associates) program was the only place where you could do clinical research and have essentially no other responsibilities. That was it.

Khot: In your opinion, what has been the long-term effect of the ATP alumni on the academic world and scientific research?

Fauci: I think it has been one of the reasons why but not the only reason, that would be presumptuous, but it has been an important reason why one has the excellence of academic medicine that we see on the outside. There is the spirit and the thread to the NIH in many, many medical scientists. You could go on forever. Take the Brigham Hospital. You got Gene Braunwald who was a legend at the Brigham Hospital. He was head of cardiology, head of medicine, and chief of the whole thing. He did all of his training here.

Khot: Did the collaboration with other alumni continue after you left the ATP?

Fauci: Oh, yeah, I mean, just in my own group, we have had collaborations with David Feltzen, David Dale, Dick Johnston, Herb Reynolds, Sandy Lawton whom I still interact with…so there are a lot of people who we still collaborate with.

Khot: Do you feel that the ATP created a sort of "invisible college" in which a network of scientist alumni from the program continued formal and informal relationships and exchanges?

Fauci: Yeah, I wouldn't say that it was any more in the collaborations that you develop during the normal evolution of your scientific interest. But there was a certain badge of having been at the NIH that adds to it a degree of collegiality among people. We all knew who we were. Let me give you an example, there is a certain pride and good feeling about people who have shared that very special experience at the NIH. I'll give you a classic example…Bob Lefkowitz is a very, very prominent scientist at Duke; Harold Varmus is a Nobel Prize winner now and President of Memorial-Sloan Kettering; Mike Brown is a Nobel Prize winner at the University of Texas Southwestern. All four of us were here together when we were Clinical Associates and that bond of being here together in the same year of 1968, the class of 1968; you feel a very special bond with these people. So when we talk about things, not infrequently in the conversation comes out the fact that we were in the same class together at the NIH. So it's an important feeling to have been part of a class…it's really more of an "esprit de corps" that you have.

Khot: Can you discuss the possibility today, in an atmosphere much more individualistic and less service-oriented, for the government to mobilize medical talent for specific objectives, let's say dealing with the AIDS crisis in Africa?

Fauci: Absolutely, in fact that's what I suggested to Secretary Thompson and to the people not only in our department but in the State Department. We should re-establish the old spirit of the corps, of the Public Health Service, of the Clinical Associates, and have those people do special work and special assignments in our attempt to partner with developing nations, like Sub-Saharan Africa, to approach the AIDS crisis. It's a perfect example. I've already said that's the way we need to go, to have a Peace Corps organization like the Clinical Associates organization that does in Africa what we did here during the Vietnam War.

Khot: Over the past few years, there has been a movement in our society to honor those who served in the Armed Forces during WWII and Vietnam. Whether through movies and media or memorials, these people are receiving increasing recognition for their service. On the other hand, while the legacy of the ATP alumni has been enormous in altering American medicine as we know it, the recognition is lacking and there is still some negative connotation associated with the term "yellow beret". Are you are aware of any resentment or sensitivity among associates to this?

Fauci: No. I think that people got so much satisfaction and gratification from what we did that, to be honest with you, it's irrelevant if people recognize it.

Khot: Dr. Robert Gallo was quoted as saying, "My fear is that the intramural program does not function at that same level in terms of the interplay between the lab and the bedside, and probably no place in the country now does. I think the NIH leadership clearly has not assigned full value to this function historically, in part because of the practical necessity, costs, and in part, because of a lack of appreciation or respect for the process." Do you agree with this?

Fauci: I think the reason for that is there is a competition for resources. I don't think there is a deliberate dichotomy between the bench and the bedside. It' s that the cost of doing clinical research in the Clinical Center is so high that the money that the people have comes out of your intramural budget so it's much easier and cost-effective to focus on fundamental basic problems as opposed to doing clinical research. And the glow and the gleam of the clinical investigator now is less than it was when we started in the late 1960's. There is recognition of that now and there is a very concerted attempt to rekindle the importance of doing clinical research. So Bob's right in that you had the golden years back in the late 60's and early 70's which went down and now we are realizing that it has gone down and a lot is being done to try and bring it back up. So if he is saying that it has gone down since back then, he's correct. But what he probably doesn't appreciate is the attempts to bring it back up.

Khot: In 1967, Rep. Daniel Flood of the House Appropriations Subcommittee on Labor, Health, and Education stated that "a quiet revolution in the practice of medicine is taking place as a direct result of research." Can you comment on this and on anything else we should know about this program?

Fauci: There has been more than a quiet revolution. It has been sustained over so many years. If you feed in all of the important things that have come out of these programs, it's just been extraordinary. That is the whole legacy of the program. He said it in 1967 but it has happened in 1968, '71, '75, etc, etc. So it has been a sustainable legacy.

Khot: Could you discuss any unintended negative effects the program may have had in keeping minorities and women out of high-level research positions as these groups were not represented in the ATP?

Fauci: No, I think that the minorities not being in high-level positions is completely unrelated to the program. I think the fact that they are not is because the pipeline to get them in and the opportunities presented to them have not been good and we really have to do better on that. That is the reason that we are trying so hard right now. If you look at the Fellows coming in now, 50% of them are women. That was never the case back then.

Khot: Dr. Fauci, thank you for allowing me the opportunity to conduct this interview.